

## Risks of Recreational Water Use

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Citizens who use river, stream, and lake water for recreational purposes are urged to be cautious and to use common sense about contact with such water. **Although the cleanliness and quality of Virginias surface waters continually improves, officials from the Departments of Environmental Quality and Health caution that it is impossible to guarantee that any natural body of water is free of risk from disease-causing organisms or injury.**

All rivers, streams, and lakes contain naturally occurring algae, bacteria, viruses, and parasites. Microbiological organisms come from plants, animals, and sometimes human sewage. The concentrations of such organisms may be increased by agricultural, industrial, and residential activities. Agricultural and urban runoff coupled with improperly or partially treated sewage can be major contributors to microbiological pollution. The types and numbers of such organisms are dependent on what runs into or is dumped in the water. The water flow, temperature, level of acidity, chemical composition, amount of organic material, and other factors can also influence how many and what kind of organisms are present.

Although there are a number of diseases that can potentially come from recreational water, reported outbreaks of such diseases have been rare in Virginia. Most of the organisms in Virginias rivers and lakes probably do not cause human illness or are in such low levels they will not make anyone sick, but there is no way to be sure. **Because natural bodies of water are so changeable, especially rivers, officials can only make general statements about the health risk of certain bodies of water; they cannot say exactly what the condition of a specific body of water is at any particular time.** Increased pollution may occur after rain washes contaminants from land surfaces. Water that does not flow freely may concentrate pollutants that are already present.

Tests on water for viruses, parasites, and bacteria that cause illness are difficult, time consuming, and costly. For these reasons, a national standard test for fecal coliform bacteria is used as an indicator of possible contamination from human waste. However, non-disease causing fecal coliform bacteria can also come from animals or multiply readily in certain types of water, so high levels of fecal coliform bacteria do not necessarily mean the water is unsafe. Samples from bodies of water that exceed the standard (an average of 200 fecal coliforms per 100 ml from 2 or more samples taken in a 30-day period or 400 fecal coliforms per 100 ml for a single sample) only indicate the potential for human sewage to be present. However, the higher the fecal coliform level, the more likely it is that sewage is present and the greater the risk that disease-causing organisms are present. On the other hand, water that tests negative for fecal coliform bacteria is not necessarily risk free.

Most of the water-borne organisms that cause disease affect the digestive tract and, therefore, are acquired by ingesting contaminated water. Less commonly, skin, ear, and eye infections can result from contact with surface water. Although recreational water users may inadvertently swallow water, deliberately drinking from rivers, streams, or lakes is never recommended. Persons whose immune systems are compromised should be very careful to avoid swallowing water from any river, stream, or lake.

In addition to risks from infectious organisms, some waters may be contaminated with toxic substances. They create more of a risk for persons eating fish from those waters than for swimmers. Health advisories which are issued when these waters are identified, may limit or prohibit consumption of fish. The public is notified via warning signs and through the brochure on fishing regulations provided by the Department of Game and Inland Fisheries.

The following suggestions will help citizens protect themselves from recreational water quality hazards:

- Look for posted signs and follow the advice on them.
- Do not swim in water that looks stagnant, muddy, or smells unpleasant.
- Try to avoid swallowing river, stream, or lake water, especially if you are immunocompromised.
- Avoid swimming several days after a heavy rainfall.
- Do not drink alcoholic beverages or use drugs when swimming or boating.
- Avoid areas where you may become trapped in rocks or debris by fast flowing water.
- Avoid flood waters that can carry hidden debris and cause injury.
- Prevent broken skin from directly contacting recreational water.
- Do not add to the risk; use appropriate toilet facilities.

For additional information, contact your local health department or the regional Department of Environmental Quality office serving your area.